THE EFFECT OF SOYBEAN OIL OR SUNFLOWER OIL SUPPLEMENTATION ON DAIRY COW PERFORMANC E AND CONJUGATED LINOLEIC ACID (CLA) IN MILK

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Abstract

Conjugated linoleic acid (CLA) is a mixture of positional and geometric isomers of linoleic acid with conjugated double bonds. I has been reported to have a wide range of beneficial effects, including; anticarcinogenic, antiatherogenic, antidiabetic and immune stimulatory. The objective of the present experiment was aimed at studying the increase of CLA in milk and performance of dairy cows through supplementation of high linoleic acid plant oils in dairy cattle feeds. Twenty four crossbred Holstein Friesian lactating dairy cows, averaging 22.9 ± 4.6 kg milk/d, 97 ± 41 days in milk and 451 ± 45 kg body weight, were blocked into 3 groups of 8 cows each. The first group was fed the control diet, the

matter and protein intakes, milk yield, milk composition and body weight change were similar ($p > 0.05$) in all treatment groups; however, net energy intake of both supplemented groups were higher than that of the control group. The $C_{6:0}$, $C_{8:0}$ and $C_{16:0}$ fatty acids in the milk of cows supplemented with plant oils were reduced ($p < 0.05$) while the $C_{18:0}$, $C_{18:1n9t}$, $C_{18:1n9c}$ and $C_{18:2n6t}$ fatty acids were significantly increased ($p < 0.05$) compared to the control cows. In conclusion, supplementation of plant oils significantly increased CLA (*cis*-9, *trans*-11 octadecadienoic) however; there was no significant difference between sunflower oil and soybean oil on CLA in milk.

Keywords: Soybean oil, sunflower oil, conjugated linoleic acid, milk production, fatty acids, dairy cows